

DYSLEXIA: CHANGING PERCEPTION FROM EDUCATION STRUGGLES TO EXCEPTIONAL ADVANTAGES

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ABSTRACT

Dyslexia generally is recognized and referred to as a learning disability and is mainly diagnosed to children. Though this mental disorder is considered to be damaging to children's early stages of learning, many people miss the flourishing opportunities that it also provides. Struggles in decoding words and basic sounds of speech can inform individuals about the long-standing negative impacts in dyslexia. Their decision into approaching art is not merely due to their individual fears in the academic field, but their existing talents. Cognitive strengths can be seen in dyslexic children rather than the many deficits' people define the mental illness as and can benefit their careers and jobs in the future. Their individual weaknesses in reading and writing are minor, but their own individual talents should be well enhanced in the academic field. This paper seeks to change others perspective of dyslexia-how it can be seen as an opportunity rather than a disorder commonly perceived as a reminder for targeted individual's learning disabilities. Their strengths in non-verbal communication are deeply investigated, having a purpose to prove dyslexia to be a positive

KEYWORDS: Dyslexia, creativity, child, talents, strengths, communication.

Psychology

INTRODUCTION

The word "dyslexia" is made up of two different parts, dys meaning not or difficult and lexia being words, reading, or language (Dyslexia and the Brain: What Does Current Research Tell Us?, 2007). Being a sub-group in learning disorders, dyslexia is a term referring to difficulty in acquiring and processing language, typically manifested in by the lack or proficiency of reading, writing and spelling. People who are diagnosed with this learning disorder experience difficulty connecting letters they see on a page with the sounds they make, making reading slow and effortful and not a fluent process for them (American Psychiatric Asso-

Under the learning disorder problems (language, speech, mathematical, or motor skills), dyslexia is commonly known, being diagnosed to an individual that manifests problems in word recognition and reading comprehension—often he or she being markedly deficient in spelling and memory (Abnormal Psychology (16th Edition) by James N. Butcher Jill M. Hooley Susan M Mineka (2014-03-03), n.d.). Furthermore, research shows that children diagnosed with dyslexia can read so slowly that it would typically take them half a year just to read the same number of words other children might read in a day (Schneps, 2014b).

Their inability to understand and decipher words that might seem normal to other individuals causes excessive problems relating to their social and emotional stage. Quoted from a researcher, emotional aspects of dyslexia, anxiety depression, and poor self-image can be built (International Dyslexia Association, 2023). Fearful of the repetitive struggles in learning leads to developing negative thoughts consciously; thoughts of being inferior to others, not able to beat others' potential, the failure of being able to achieve their idealistic self. Stating that dyslexic children can eventually have these effects, it can be argued whether or not they could actually grow creatively through the education process. In other words, Dyslexia being a positive stimulus instead of the obvious concept in not meeting the same expectations with others academically.

Though this is the case, it is stated that individuals diagnosed with dyslexia are particularly creative and can form their way of thinking outside the box, able to develop and enhance their strengths mainly associated with their learning difference (American Psychiatric Association, 2023).

Hypothesis

Two hypotheses can be made regarding this topic:

Hypothesis A: Their mindsets and growth in creativity can be altered by education, but not fully strengthened due to their own emotional and mental problems. Hypothesis B: Their mental and emotional stage does not affect how they are able to strengthen their creativity and to solve problems through thinking outside the box.

Through answering the hypothesizes, results can be discovered or made as to whether dyslexia act as a positive stimulus for approaching creativity or is basically seen as a mental illness.

Materials & Methods

Secondary research was done in collecting data about tests in proving the artistic side of dyslexics and extensive research was conducted into understanding the advantages of the creative mind of dyslexics. Psychological experiments found in midst of the research process are as follows:

Participants in the 1st study: 74 students (34 females, 40 males) from two art schools at Goteborg University, Sweden (Department of fine arts Valand and Department of photography) and 80 students (43 females, 37 males) from the School of Economics and Commercial Law at the same university. Table 1 was described as a correlation of combined samples of dyslexic and non-dyslexic students, but also comparing two main student categories (art vs non-art partici-

Participants in the 2nd study:

(Based on research) Method 1: Collected samples of art and non-art students categorized into two investigated topics: Mean and standard deviation of the assessments and Estimates of the incidence of dyslexia according to different criteria. This is defined as a correlational study, testing them through multiple categories relating to the pronunciation of words, reading, wordchains, and self-reported dyslexic signs within the experimental group.

Based on research, another experiment was done that emphasizes dyslexic children's ability in communication. Grade 2-4th four graders, those who are diagnosed with dyslexia and those who are not, are tested. The study is mainly assessed on their originality and creativity across verbal, figural and non-verbal modalities.

Results

Study 1:

Table 1. Mean and standard deviation of the assessments

Assessment	All	Art	Non-art		
Self-report of dyslexia signs (factor scores)	0 (1.0)	-0.25 (1.08)	0.24 (0.86)	t(394)=5.05; p < 0.001	
Self-report of reading interest (factor scores)	0 (1.0)	0.13 (0.90)	-0.12 (1.07)	t(394)=2.51; p < 0.01	
Wordchains Phonological choice	80 (12.6) 33 (8.9)	79 (13.0) 32 (8.8)	81 (12.0) 34 (8.7)	t(394)=0.94; n.s. t(394)=2.80; p < 0.05	

Figure 1.1: Mean and standard deviation of the assessments Source: ResearchGate (2002)

Study 2:	40 I. Lundberg and U. Wo				
	Table 2. Estimates of the incidence of dyslexia according to different criteria				

	Art	Non-art	
Self-report (dyslexia signs) 1 S.D. below the mean	44 (22.7%)	17 (8.4%)	z=3.97; p < 0.00
Self-report (dyslexia signs) 1.5 S.D. below the mean	25 (13%)	10 (5%)	z=2.86; p<0.01
Self-report and phonological choice 1 S.D. below the mean	17 (8.8%)	5 (2.5%)	z=2.75; p < 0.01
Self-report, phonological choice and wordchains 1 S.D. below the mean	9 (4%)	3 (1.5%)	

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Figure 1.2: Estimates of the incidence of dyslexia according to different criteria

Source: ResearchGate (2002)

The second study provides a broader spectrum for experimenters. For instance, in the art group of the second study, people who aren't exceptionally talent in art are also included—subjects like architecture and design and crafts. Through the two studies, it can be demonstrated that dyslexia make a more obvious appearance in art students, compared to students who are enrolled in non-art programs in the university. Since this was a correlational study, causal conclusions aren't expected. The paper gave them sufficient reasons to assume that dyslexics approach art not necessarily as a form of escape of education and literary demands in education, but to connect with their early-discovered talents—building on to the development in the concept of how artistic development and dyslexia are connected as a real relationship. Experiments were successfully done in having a purpose to interpret the strong relationship between creativity and dyslexia—their early failures becoming a way for them to seek out various opportunities for success.

Discussion

Though they have weaker performances dealing with speech and recognizing words, their non-verbal communication seems to be with higher intelligence than non-dyslexic children. Fluency and originality allow and acts as a key element of outside-the-box imagination and divergent thinking essential for achieving instances in innovation (Kim, 2006). It was noticed that compared to their non-dyslexic peers, they were able to achieve fast paced imaginative thinking-generating broader and unique visual responses.

The experiment aims to suggest that instead of solely emphasizing the learning flaws and "deficits" of diagnosed children, their potential for non-verbal creativity strengths should be underscored, understanding the way in which parents, education programs and curriculums should strengthen this side of them through developing effective strength-learning strategies. That way, success, growth and the thriving process is guaranteed in educational facilities and the larger society combined.

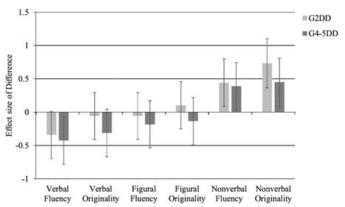


Figure 2.1: Hong Kong study of dyslexic and non-dyslexic children (2nd-4th graders)

Source: Dyslexic Advantage (2022)

From the results, it could be seen that children with dyslexia still exhibited higher fluency and originality of nonverbal creativity than their other peers, regardless of level or age. These two factors are beneficial to outside-the-box imagination and divergent thinking essential for achieving innovation (Kim, 2006). Results indicate that compared to other children, dyslexics can imagine diverse possibilities and generate broader and more unique responses.

Instead of stating the obvious and seeing dyslexia as only a "deficit", teachers, parents, and educational programs and facilities should strive to emphasize their strengths in non-verbal creativity. This can help them succeed whether in school or in the larger community.

Though this disorder is commonly seen as chances of missing out the norms in writing and reading processes, it can also be seen as a helping factor towards success. Based on research, it is told that a 2004 study proved better performance in both the quantity and originality of ideas of dyslexics than non-learning-disabled students, and a 2016 study finding dyslexic individuals able to connect different mental fields through unusual combination of ideas. Many art students have excelled in part because of their dyslexia and not despite it. Many dyslexic entrepreneurs describe how their divergent thinking helped them excel in chosen fields (Fyre, 2019).

Based on research in the Scientific American (The Advantages of Dyslexia), the article proved dyslexia to be associated with differences in visual abilities, acting as an advantage in many circumstances that can occur such as situations in mathematics, science, technology and engineering. In an experiment done at MIT, by Gadi Geiger and his colleagues, they found out that dyslexic people can distrib-

ute their attention far broader than typical readers and are able to pick out more words spoken by voices widely distributed in the room of a cocktail party. Astrophysicists were tested to spot the stimulated graphical signature in a spectrum characteristic of a black hole and were able to spot black holes through noises—a factor that can be beneficial to their careers (Schneps, 2014).

People diagnosed with dyslexia is simply the cognitive trade-off between new information exploration and exploitation of existing knowledge—not being as intelligent and knowledgeable as other children. "The deficit centered-view of dyslexia isn't telling the whole story", quoted Dr. Helen Taylor, scholar at the McDonald institute for Archaeological Research at the University of Cambridge. "This research proposes a new framework to help us better understand the cognitive strengths of people with dyslexia" (Taylor, 2022).

Too many people see dyslexia as a disadvantage, but their ability to have divergent thinking and to be experts at non-verbal communication and visual attention can benefit in their growth of creativity and solving problems. Furthermore, it might also be a contributing factor to success in workplaces in their future, in many subjects like mathematics and science.

Dyslexic People with Enhanced Abilities

In the journal Frontiers of Psychology, researchers at the University of Cambridge argue that dyslexia shouldn't be framed as a disorder. Results are found and determined that dyslexic people actually have "enhanced abilities" in certain areas including discovery, invention and creativity. We urgently need to start nurturing this way of thinking to allow humanity to continue to adapt and solve key challenges," said lead author, Dr. Taylor in Cambridge University. Researchers concluded that dyslexic people are seen to be specialists in exploration and curiosity, inventiveness and big-picture long-term thinking linking to these explorative behaviors.

The Value of Dyslexia, report by professional services form EY and Made By Dyslexia, charity that is defining dyslexia, sees dyslexic strengths as a form of help to employers navigating the changing world of workforces.

Dyslexic strengths align to core work-related skills and abilities of the future

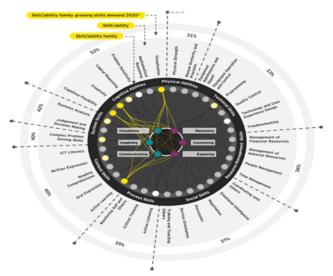


Figure 2.2: Dyslexic strengths align to core work-related skills and abilities of the future

Source: Made By Dyslexia (2018)

Even the most recognizable people—Albert Einstein, Leonardo Da Vinci and Pablo Picasso had dyslexia, and it can be clearly proved to be something an individual should not be ashamed of. Actors Orlando Bloom and Keira Knightley and entrepreneur Sir Richard Branson are among a number of highly successful people with dyslexia, proved by a film from Made by Dyslexia (Victoria, 2022).

Conclusion

This study emphasizes and illustrates the importance of understanding dyslexic children and to understanding the real way in which dyslexia is defined—a growing opportunity, not in means of highlighting a child's lack of general knowledge in reading and writing. Hypothesis B deems to be correct, as there is no evidence of mental and emotional stages of an individual interfering with their dyslexic traits. Their individual cognitive strengths- being able to communicate nonverbally in artistic forms or visual attention through learning pictures and images—proves to society the aid we should provide to them in continuing the growth of their strengths and talents, the growth of their expressive field. People-especially educational programs and facilities, teachers and parents who are working with them - should continue to support the divergent imagination and problem-solving skills in dyslexic children, further spreading the overall message that dyslexic children can fit into society just as normal children can. Their

own individual strengths in developing unique solutions to problems compared to other children can help them in careers stated above. Dyslexia shouldn't be seen as a fixed struggle and a comparative, but the advantages and the growth process kids can get from using their creative minds. Based on what was researched, dyslexia can act as a positive stimulus—seeing the mental illness from a whole new angle.

REFERENCES

- Butcher, J. N., Hooley, J. M., & Mineka, S. (2014). Abnormal psychology: This book is compiled from: Abnormal psychology, 16th edition Butcher, Hooley & Mineka. Pearson Australia.
- Frolov, L., & Schaepper, M. A. (2021, August). What is specific learning disorder? Psychiatry.org - What Is Specific Learning Disorder? Retrieved February 5, 2023, from https://www.psychiatry.org/patients-families/specific-learning-disorder/what-is-specific-learning-disorder/section 1
- is-specific-learning-disorder#section_1

 Fyre, D. (2019, September 27). The positives of dyslexia. Psychology Today. Retrieved February 5, 2023, from https://www.psychologytoday.com/gb/blog/neurodiverse-age/201909/the-positives-dyslexia
- Hudson, R. F., High, L., & Otaiba, S. A. (2007). Dyslexia and the brain: What does current research tell us? LD OnLine. Retrieved February 5, 2023, from https://www.ldonline.org/ld-topics/reading-dyslexia/dyslexia-and-brain-what-does-current-research-tell-us
- International Dyslexia Association. (n.d.). ...until everyone can read! International Dyslexia Association. Retrieved February 5, 2023, from https://dyslexiaida.org/
 Masterson, V. (2023). People with dyslexia have 'enhanced abilities', according to a
- Masterson , V. (2023). People with dyslexia have 'enhanced abilities', according to a new study. World Economic Forum. Retrieved February 9, 2023, from https://www.weforum.org/agenda/2022/07/dyslexia-enhanced-abilities-studies
 Schneps, M. H. (2014, August 19). The advantages of dyslexia. Scientific American.
- Schneps, M. H. (2014, August 19). The advantages of dyslexia. Scientific American. Retrieved February 5, 2023, from https://www.scientificamerican.com/article/the-advantages-of-dyslexia/
- Taylor, H. (2022, June 24). Developmental dyslexia essential to human adaptive success, study argues. University of Cambridge. Retrieved February 5, 2023, from https://www.cam.ac.uk/research/news/developmental-dyslexia-essential-to-human-adaptive-success-study-argues
- adaptive-success-study-argues

 Team, D. A. (2022, April 17). Creativity and dyslexia. Dyslexia | Dyslexic Advantage. Retrieved February 5, 2023, from https://www.dyslexicadvantage.org/creativity-and-dyslexia/
- dyslexia/

 10. Wolff, U. (2002, January). (PDF) the prevalence of dyslexia among art students researchgate. Researchgate. Retrieved February 5, 2023, from https://www.researchgate.net/publication/11380532_The_Prevalence_of_Dyslexia_Among_Art_Students